



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,462	03/13/2002	Jaana Alastalo	30-557	3386

7590 03/26/2004

Nixon & Vanderhye
8th Floor
1100 North Glebe Road
Arlington, VA 22201-4714

EXAMINER

ALVO, MARC S

ART UNIT	PAPER NUMBER
----------	--------------

1731

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/069,462

Applicant(s)

ALASTALO ET AL

Examiner

Steve Alvo

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3-14-04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 98/21400 in view of MAPLES et al (5,853,535) or NISKANEN et al (5,258,100).

WO 98/21400 teaches treating pulp with chlorine dioxide by mixing the chlorine dioxide into the pulp with one or more mixers or pumps (page 5, lines 22-25) and the chlorine dioxide treatment is carried out at a temperature of 40-90°C at a pH of 2 to 4 for a time of 5 minutes using 2 to 15 kg/ton pulp of chlorine dioxide. These are the exact conditions used by Applicant and the treatment would obviously provide the same results of removing lignin (claim 12). WO 98/21400 adds sodium hydroxide to the pulp in the same or different mixer or pump (page 5, lines 22-25) as the chlorine dioxide and removes any remaining amounts of chlorine dioxide (page 4, lines 25-31). The pulp after residual chlorine dioxide is removed is then washed and peroxide bleached (page 5, lines 26-27). The mixer or pump of WO 98/21400 would be a closed space. It would have been obvious to the artisan to prevent any leakage of the chlorine dioxide to the environment as WO 98/21400 teaches the discharge of substances have a negative effect on the environment (page 1, lines 17-22). MAPLES et al teaches using a high intensity mixer for mixing chlorine dioxide into pulp, column 17, lines 17-20. Or NISKANEN et al teaches using a fluidizing high intensity mixer to mix chlorine dioxide into pulp and then pump the pulp through the discharge (column 5, lines 28-47). It would have been obvious to use the high intensity mixer of MAPLES et al or NISKANEN et al as the mixer and/or pump of WO 98/21400 as they

both teach using mixers to mix chlorine dioxide into pulp and pump (discharge) the pulp. It would have been obvious to use a high intensity mixer to provide better mixing of the pulp and chlorine dioxide than a low intensity mixer. The mixers of claim 4 appear to be conventional mixers and would have been obvious to use any conventional high intensity mixer into the pulp. The use of plural chlorine dioxide stages would have been obvious to the artisan as such is conventional to provide increased bleaching. If this is not obvious then such plural stage addition is taught by MAPLES et al, column 9, lines 50-51, e.g. DEDP sequence (two-chlorine dioxide steps). See WO 98/21400, page 3, lines 28-35 for oxygen delignification after the digestion washing/screening and before the chlorine dioxide bleaching. Obviously very little chlorine dioxide would be in the liquid phase as it is all consumed by the alkali treatment before washing.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 98/21400 in view of MAPLES et al (5,853,535) or NISKANEN et al (5,258,100) as applied to claim 1 above, and further in view of WO 98/00602.

WO 98/00602 teaches a process similar to WO 98/21400 in removing residual chlorine dioxide from the pulp after bleaching with chlorine dioxide. WO 98/00602 teaches that the chlorine dioxide treatment time is directly related to the temperature of reaction, page 2, lines 7-15. It would have been obvious to control the temperature to control the time of the reaction. Obviously the amount of residual chlorine dioxide can be controlled by the reaction time and temperature.

Claims 4, 9 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 9 and 16 are indefinite as it is not clear if the treatment or the chlorine dioxide steps are performed as several steps. Claim 4 is indefinite as a "static mixer" or "valve" is not a "high intensity mixer". The term "high intensity mixer" is usually used to describe high speed fluidizing mixers which rotate at high velocity, e.g. as described in NISKANEN et al.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant does not indicate how static mixers and valves provide high intensity mixing. Does Applicant use standard pulping mixers to accomplish the high intensity mixing? How does the static mixer and valve provide "high intensity mixing".

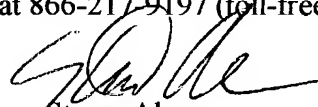
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Alvo whose telephone number is 571-272-1185. The examiner can normally be reached on 5:45 AM - 2:15 PM.

Application/Control Number:
10/069,462
Art Unit: 1731

Page 5

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Steve Alvo
Primary Examiner
Art Unit 1731

msa